

SKF ball bearing units UC range

Japanese Industrial Standards compliant ball bearing units



Solid design, solid benefits

In order to meet the industry's demands of improved protection against contaminant ingress, better shaft balance and locking strength, we have now developed a new range of ball bearing units – the UC range.

These bearing units offer optimized protection against contaminants as well as better resistance against washdowns. In addition, the units are designed with a 120° grub screw angle locking system to operate reliably in applications where good shaft balance is needed and where systemic vibration is a characteristic application condition.

Easy to order, easy to replace

You want a solution that makes your life easy – a solution with interchangeable boundary dimensions, housing configurations and part numbers. The UC range ball bearing units achieve this and more. It's compatible with JIS* housings available today on the market. No modification of your machine is needed. The dimensions meet most of the current UC designated bearing unit fitting requirements. And whatever product you need, with SKF you know it will be easy to obtain, straightforward to install and manufactured to SKF quality levels.

* JIS: Japanese Industrial Standards



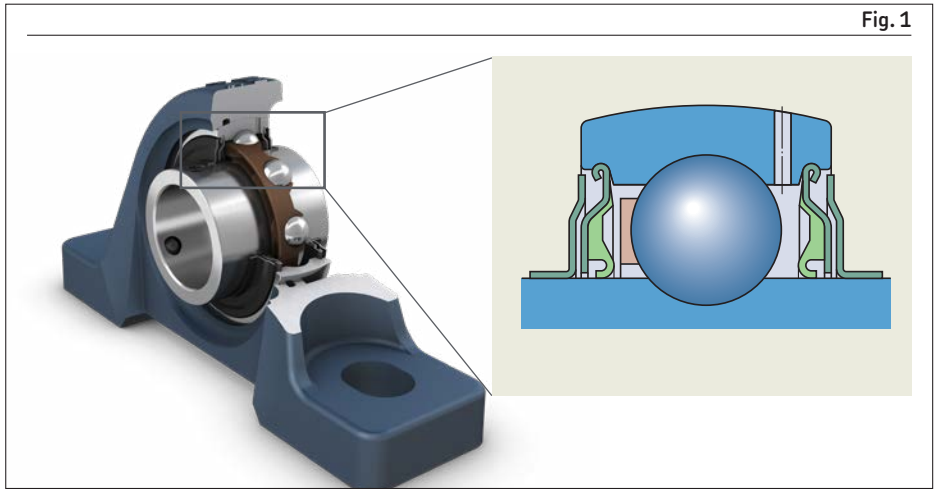
Main applications include

- Material handling conveyors
- Agriculture machinery
- Food & beverage machinery
- Packaging equipment
- Fitness equipment
- Air handling



Other industries

- Textile machinery
- Construction machinery
- Escalators
- Metal industry



Sealing system

SKF has cascaded its extensive field proven sealing experience to this new product range. The sealing system consists of an integral single-lip inner seal and an external flinger fitted on the inner ring (**fig 1**). This additional barrier acting as a deflector, together with the seal, improves bearing protection against the ingress of contaminants. Comparative tests of contaminant and washdown resistance show that SKF units perform better than comparable competitor products (**diagrams 1 and 2**).

Solid design for increased cleanliness

The solid base design provides a smooth surface to avoid the harboring of contaminants, especially in contaminated conveyor operating environments. The solid design also limits the risk of dirt collecting underneath the housing support and improves resistance to vibration.

To help comply with health and safety regulations, UC bearing units with flanged and take-up housings are available with hydrophobic polypropylene end covers. We offer these end covers as a high availability option.

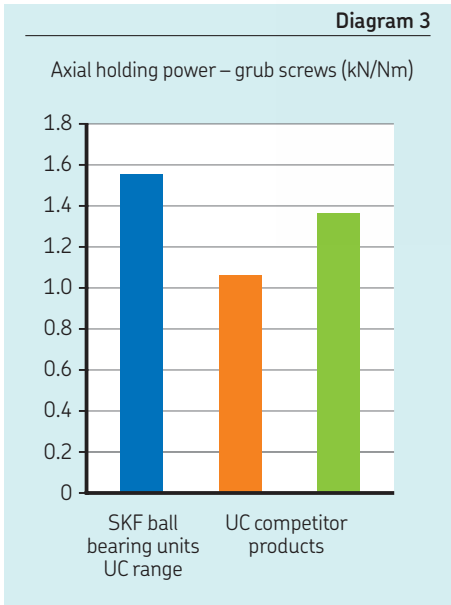
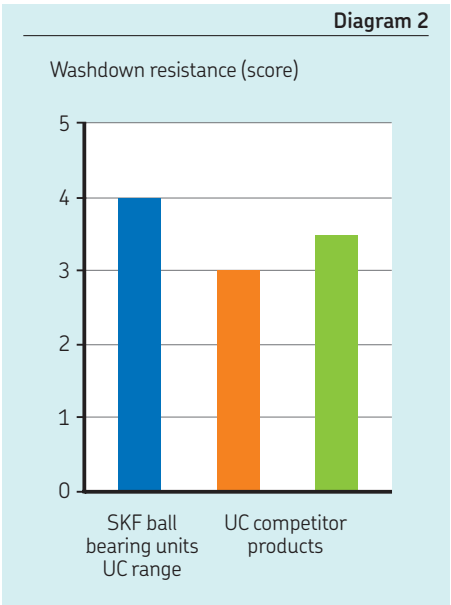
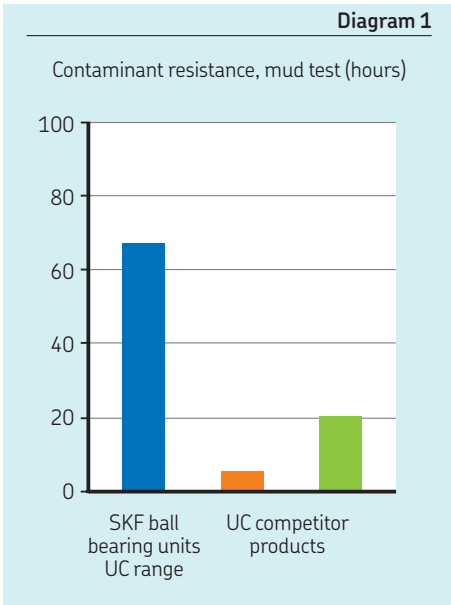
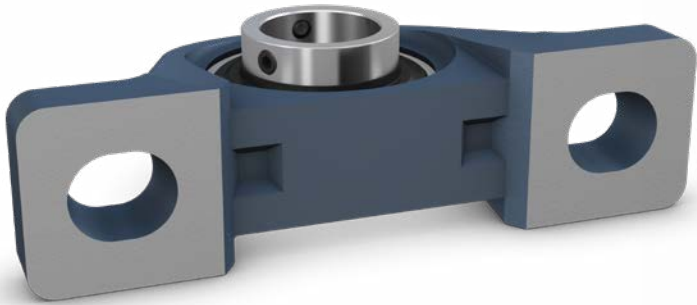
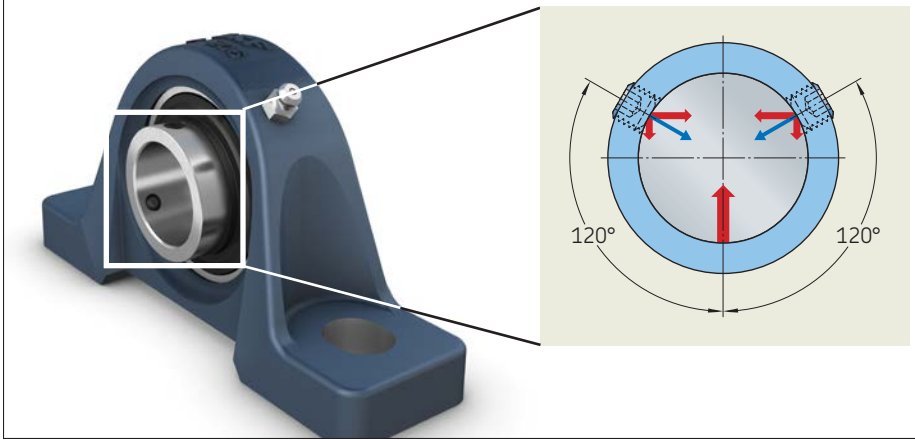


Fig. 2



Please note that end covers are not included with the SKF ball bearing units and must be ordered separately.

Better balance with a 120°¹⁾ locking screw angle

One of the most frequent causes for ball bearing unit failures in high speed applications is shaft imbalance and vibration loosening the locking system. Designing the UC range with a grub screw angle of 120° not only improves balance at high speed, it also reduces deformation of

the bearing when locking. For distribution of the forces acting on the shaft (fig 2).

A test of the axial holding power of the grub screw showed that the SKF locking system performed better than our competitors' equivalent offers (diagram 3, page 3).

¹⁾ Valid up to bore diameter 65 mm, for larger diameter shaft applications characterized by higher peak loads and lower rotational speeds, the ball bearing unit features a grub screw angle of 62°

SKF high-quality grease

Poor lubrication accounts for over 36% of premature bearing failures. In fact, most low speed applications fail due to lubrication related issues, not necessarily due to bearing fatigue. Provided that recommended maintenance intervals are followed, SKF high-quality grease helps bearings achieve expected service life as the SKF lubricants are designed to perform under real conditions (table 1).

Table 1

Lubricating greases

Technical specification	Grease fills in standard ball bearings standard ball bearing units
Thickener	Lithium-calcium soap
Base oil	Mineral oil
Colour	Yellowish brown
Temperature range [°C] (continuous operation)	-30 to +120 ¹⁾
Kinematic viscosity [mm ² /s]	190/15
Consistency (to NLGI scale)	2
Other	Long life grease

¹⁾ The temperature range for reliable operation in accordance with the SKF traffic light concept is between 10 and 120 °C.

Your benefits at a glance

SKF understands machine and plant productivity and the need to deliver high rotating equipment performance. The UC range has been designed to provide reliable performance as well as reduce machine downtime. It includes specific features that can make the difference in your equipment:

- Interchangeable with JIS housing
- Full range assortment
- Shorter lead times with available local stock
- 120° grub screw angle – better balance at high speed and less deformation when locking
- Robust design reducing contaminant ingress and vibration
- Enhanced washdown resistance

Designations

The complete designation for the SKF ball bearing units – UC range consists of:

- Prefixes, identifying ball bearing housing type
- Figures, identifying the size
- Suffixes, identifying design and variants

More details about the basic designations and the supplementary designations can be obtained from the table **Designation system**.

SKF's global distribution network – always close to you

Finding replacement parts can sometimes be a challenge. SKF is well positioned to bring you the right support and the right parts, no matter where your application is based. We have 17 000 distribution locations in over 130 countries around the globe, which, together with our distribution partners, help us achieve industry leading product availability.

Designation system

Examples: UCP 216
UCFL 204/H

UC P 2 16
UC FL 2 04 /H

Bearing series

UC Insert bearing with grub screws
UK¹⁾ Insert bearing with a tapered bore and adapter sleeve

Housing type

P Pillow block unit
F Flanged unit, square 4-bolt flange
FL Flanged unit, oval 2-bolt flange
FC Flanged unit, round 4-bolt flange
T Take-up unit for linear motion
FB Flanged unit, 3-bolt bracket flange
PA Short base pillow block unit

Dimension series

2 Normal series
3 Heavy duty series

Bore diameter

For metric shaft
04 20 mm
to to
18 90 mm

Suffixes

/H Higher stability and better load balance than standard
For UC ball bearing units: 120° grub screws angle instead of 62°
K Without adapter sleeve

¹⁾ Order adapter sleeve separately.

Technical specifications

Dimensions and tolerances

Ball bearings UC type according to ISO 9628:2006
Ball bearings UK type according to JIS B 1558:1995, with tapered bore 1:12
Adapter sleeve for UK type H23 series according to ISO 2982-1:1995
Housings according to JIS B 1559:1995

Bearing radial internal clearance

Ball bearings UC type with cylindrical bore according to Group N (CN) ISO 9628:2006
Ball bearings UK type with tapered bore according to Group 3 (C3) ISO 9628:2006

Recommended fits and shaft tolerances

Ball bearings UC type with cylindrical bore:

- for $P > 0,05 C$ and/or high speeds → h6
- for $0,035 C < P \leq 0,05 C$ → h7
- for $0,02 C < P \leq 0,035 C$ and/or low speeds → h8
- simple bearing arrangements or $P \leq 0,02 C$ → h9 – h11

Ball bearings UK type with tapered bore:

- for all loads and speeds → h9/IT5

Rotation limiting speed

Please refer to the technical tables enclosed

Permissible misalignment

Up to 5° when lubrication is not required
Up to 2° when lubrication is required

Lubrication and maintenance

Standard grease characteristics, please refer to **Table 1**
Bearing relubrication is not required if:

- loads and speeds are moderate
- vibration does not occur
- operating temperatures are between 40 and 55 °C

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